Joint research into the refrigeration system of the future by TGW Logistics, Hauser, and the FH Steyr Logistikum

Project analyzes industry requirements for refrigeration equipment, cold storage rooms, and refrigerated transportation.

The team with representatives of Hauser and TGW Logisitcs, as well as Logistikum .RETAIL

MARCHTRENK, AUSTRIA, October 6, 2023 /EINPresswire.com/ -- The Austrian full-range refrigeration equipment and technology supplier Hauser, the Grocery Business Unit of TGW Logistics, and the University of Applied Sciences in Steyr (with its research initiative Logistikum.RETAIL) have been conducting a study to research the refrigeration systems of tomorrow. What processes are necessary to cover in grocery retail? What store and fulfillment concepts must be considered? And last but not least: how do the requirements of traditional retailers differ from those of omnichannel providers or purely online players?

Traditional, online, and omnichannel grocery retailers were surveyed for the study. Front and center was the overall process for these businesses: from producing the groceries to storing them and finally selling them. "Depending on whether we're talking about a traditional retailer, a purely online player, or an omnichannel provider, there are considerable differences in the requirements for their refrigeration systems," explains Michael Schedlbauer, Vice President Business Development Grocery at TGW Logistics. "The survey showed that the level of automation is low right now and the majority of the processes are still carried out manually."

SHOP, DARK STORE, OR FULFILLMENT CENTER

In grocery retail, refrigeration equipment comes into play in different areas: in the shop itself and off the sales floor for the purposes of storage and picking for deliveries.

Some companies use so-called dark stores for compiling online grocery orders; these are set up similarly to supermarkets. They are structurally optimized for ideal picking, with short travel distances, and rely on a combination of refrigeration equipment and large cold storage cells.

Generally speaking, fulfillment centers in the grocery retail industry have four different temperature zones, each with its own particular design and technology requirements:

- Dry storage
- 35-43 °F cold storage (dairy products, sausage, fruit)
- 32-35 °F cold storage (frozen food, meat, fish)
- Frozen storage

Determining the suitable dimensions for the cold areas presents a particular challenge in terms of fulfilling the customer's requirements of minimum energy costs and high return on investment (ROI). "Finally, the needs and requirements of all stakeholders must be channeled into one coordinated concept in order for the shopping experience of the future to be as attractive and sustainable as possible for consumers. Considering the expertise of the project partners involved in the study, this matter is in the best of hands," says Gerhard Hetzmannseder, Director Products & Engineering at Hauser.

SUSTAINABILITY, ENERGY CONSUMPTION, AND FLEXIBILITY

The study made one thing very clear: the greatest challenge for a temperature-controlled supply chain is maintaining a continuous, uninterrupted cooling chain. From goods receiving to storage and picking, all the way to the last mile. Traceability must be ensured at all times. "Beyond that, many companies in the industry are paying more and more attention to other factors: alongside ergonomics for the employees, such subjects as sustainability, energy consumption, and flexibility are becoming more and more important," stresses Michael Schedlbauer.

"Our research approach made it possible to highlight perspectives and fields of action in the refrigerated supply chain in the context of differing store and fulfillment concepts, and to deduce requirements for refrigerated infrastructure/solutions," affirms FH Assistant Professor Dr. Michael Plasch. "By developing these three use cases (online only, hybrid, and shops), it was possible to take specifics into account for each business model and gain insights about product ranges, data exchange, and the use of technology and technical equipment, among other things."

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